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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/533,421	03/22/2000	Charles S. Roberson	CISCP794	8630

26541   7590   07/26/2005

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ART UNIT	PAPER NUMBER
2662	

DATE MAILED: 07/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1,3-10 and 12-21_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1,3-10 and 12-21_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)
2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .
5)☐ Notice of Informal Patent Application (PTO-152)
6)☐ Other: _____.

DETAILED ACTION

1.   The amendment filed on 05 May 2005 has been entered and fully considered.

2.   Claims 1, 3-10, and 12-21 are currently pending.

Claim Objections

3.   Claims 1, 6, 19, 15, 19, 20 and 21 are objected because of the following

informalities: The use of the phrase "communication link between the plurality of cards"

only applies to the class of cards referred to, in the specification, as low-speed cards

and found in the data plane as shown in Figure 1. There is no direct support in the

specification indicating that data flows directly between the high-speed cards and the

high-speed cards are interconnected via a point-to-point connection. This distinction is

important as the application distinguishes itself as being able to monitor the status of

communication links between the different classes of cards it supports.

Claim Rejections - 35 USC § 103

4.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

5.   **Claims1, 3, 6-8, 10, 12, 15-17, 20, and 21** are rejected under 35 U.S.C. 103(a)

as being unpatentable over Cantwell et al (US 6, 370, 155), hereinafter referred to as

Cantwell, in view of Barker et al (US 6, 363, 421), hereinafter referred to as Barker and

Surprenant et al (US 6, 385, 194), hereinafter referred to as Suprenant.

6.   Regarding **claims 1, 10, 20, and 21**, Cantwell discloses a method and an

apparatus for controlling the operation of a flexible cross-connect system which has a

plurality of cards **(Figure 1, elements 28 and 30; Column 6, Lines 5-10)** including an

active control unit, a redundant control unit **(Figure 1, elements 12 A & B; Column 3,**

Lines 37-40), a plurality of interface cards **(Figure 1, elements 28 and 30; Column 6,**

Lines 5-10), an active cross-connect unit, a redundant cross-connect unit **(Figure 1,**

elements 24 and 26; Column 4, Lines 1-10), and a backplane forming a plurality of

data buses **(Column 16, Lines 33-38 and Column 18, Lines 40-45)**, the data buses

acting as communications links between the plurality of cards **(Column 10, Lines 42-45**

and Column 11, Lines 5-10), that comprises:

monitoring the operational status for each one of the plurality of cards and each one of

the communications links between the plurality of cards within the flexible cross-connect

system; **(Column 12, Line 41 and Line 47; Column 13, Line 7and Line 12; Column**

15, Line 58; Column 17, Lines 45-48; Cantwell's system supports continuous

performance monitoring in effect to determine the operational status of the cards

and network elements. Performance monitoring sole purpose is to determine the

operational status of a given network element by comparing the observed test

results to predetermined threshold values)

determining when the operational status of any of the plurality of cards or the

communications links between the plurality of cards indicates that the card or the

communications link between the plurality of cards is non-operational; **(Column 12,**

Line 41 and Line 47; Column 13, Line 7and Line 12; Column 15, Line 58; Column

**17, Lines 45-48;Performance monitoring of network elements involves data
collection as well as determining the operational status of network elements.)**
autonomously switching from the non-operational active card to an associated
redundant card when the operational status of the non-operational active card is
determined or from the non-operational active communications link between the plurality
of cards to an associated redundant communications link between the plurality of cards
when the operational status of the non-operational active communications link between
the plurality- of cards is determined; **(Column 16, Lines 41-46;Column 17, Lines 45-
48;. Cantwell's system allows autonomous switching at the network interface
level and at the system communication link level if the non-operational active
card's or active link's performance monitoring indicated the need to switch to the
redundant card or link respectively.)**
determining when the non-operational active card or the non-operational active
communications link between the plurality of cards requires maintenance; **(Column 2,
Lines 42-49; Column 6, Line 28; Column 9, Lines 30-32; Cantwell's system not
only determines that the specific card or link needs maintenance but also has the
capability to keep a circuit or a connection in service while performing
maintenance on the non-operational card or link.).**

Cantwell, however, does not expressly disclose reporting maintenance is
required for non-operational cards or links.

Barker discloses a system and method to remotely manage a network element
identical to that of Cantwell's and reports maintenance is required for the

non-operational active card or the non-operational active communications link between

the plurality of cards when it is determined that the non-operational active card or the

non-operational active communications link between the plurality of cards requires

maintenance. **(Barker uses SNMP protocol to monitor and get status from the**

network entities it monitors. See Column 4, Lines 43-48 and 56-62. Barker further

indicates that different messages are reported to the Element Management

System including operational state change (Column 34, Item1), Alarms (Column

34, Item 2), Information Message (Column 34, Item 3), and Configuration Change

(Column 34, Item 4). Further, <u>Barker teaches that alarms indicate a condition of

unexpected nature, which requires special and persistent technician notification

that is tantamount to indicating maintenance is required to one skilled in the art.</u>)

It would have been obvious to a person of ordinary skill in the art at the time of

the invention to use the maintenance-reporting scheme of Barker in Cantwell's invention

when a card or a link fails.   One would have been motivated to do this because having

the failed component up and running again would ensure that the current connection

has a backup connection for when it breaks down in the future guaranteeing continued

path protection and end-to-end path integrity. Further including Barker's method and

system in Cantwell's system eases remote network management.

Cantwell, however, fails to disclose that the low-speed cards inter-connected via

a data bus in a data plane can be monitored and their operational status can be

determined.

Surprenant teaches monitoring the operational status each one of the

communications links between the low-speed cards and determining when the

operational status becomes non-operational. **(Surprenant discloses a**

communication system 50 that carries both data and voice traffic in Figure 2. The

architecture is further elaborated in Figure 3 and contains switch for cross

connecting to the desired slots of the TDM Bus 78. (See Column 8, Lines 55-59).

Surprenant teaches different Ethernet hub cards can be part of the system and

traffic is routed between the cards. The cards are fully compliant with SNMP

protocol and system status for the links and ports associated with the cards are

maintained. (See Column 33, Lines 5-10). Suprenant also shows his system is

designed for remote management and fault monitoring. (See Column 37, Lines 10-

12.) It also has independent fault monitoring that supervises system operation,

detects, and reports faults to the system administrator. (See Column 37, item 4,

Line 38 and Column 38, Lines, 1-16). Surprenant's system even offers remote

manual diagnostic tools. (Column 37, Lines 57-58). Further more Surprenant's

system has capability for monitoring communication links between low-speed

cards and interfaces like Ethernet hub cards. (See icon on Figure 17 a, details on

Figures 17 c and d; See also Column 43, Line 23 and Lines 30-35).

It would have been obvious to a person of ordinary skill in the art at the time of

the invention to use the SNMP based link monitoring capability in Cantwell's invention to

detect when a card or a link fails. One would have been motivated to do this because it

is cost effective to use commercially available monitoring tools and most commercially

available enterprise monitoring tools are based on SNMP protocol.

7.   Regarding **claims 3 and 12**, Cantwell disclosed the aforementioned invention,

including the method of preventing communications from being sent to the non-

operational active card or over the non-operational active communication link. **(Column**

7, Lines 38-42; In telecommunication switching circuitry any card or link made out

of service and unavailable is unable to communicate with other network elements

and is a status used to indicate "an entity is unavailable" to conduct normal

operations.)

8.   Regarding **claims 6 and 15**, Cantwell discloses a method for controlling the

operation of a flexible cross-connect system, which has a plurality of cards **(Figure 1,**

elements 28 and 30; Column 6, Lines 5-10) including an active control unit a

redundant control unit, **(Figure 1, elements 12 A & B; Column 3, Lines 37-40)**, a

plurality of interface cards **(Figure 1, elements 28 and 30; Column 6, Lines 5-10)**, an

active cross-connect unit, a redundant cross-connect unit **(Figure 1, elements 24 and**

26;Column 4, Lines 1-10), and a backplane forming a plurality of data buses **(Column**

16, Lines 33-38 and Column 18, Lines 40-45), the data buses acting as

communications links between the plurality of cards **(Column 10, Lines 42-45 and**

Column 11, Lines 5-10).

Cantwell's disclosed method comprises:

monitoring the operational status for each one of the plurality of cards and each

one of the communications links between the plurality of cards within the flexible

cross-connect system; **(Column 12, Line 41 and Line 47; Column 13, Line 7and Line**

12; Column 15, Line 58; Column 17, Lines 45-48; Cantwell's system supports

continuous performance monitoring in effect to determine the operational status

of the cards and network elements. Performance monitoring sole purpose is to

determine the operational status of a given network element by comparing the

observed test results to predetermined threshold values).

determining when the operational status of any of the plurality of cards or the

communications links indicates that the card or the communications link between the

plurality of cards is non-operational; **(Column 12, Line 41 and Line 47; Column 13,**

Line 7and Line 12; Column 15, Line 58; Column 17, Lines 45-48;Performance

monitoring of network elements involves data collection as well as determining

the operational status of network elements.)

autonomously switching from the non-operational active card to an associated

redundant card when the operational status of the non-operational active card is

determined or from the non-operational active communications link between the plurality

of cards to an associated redundant communications link between the plurality of cards

when the operational status of the non-operational active communications link between

the plurality of cards is determined;**(Column 16, Lines 41-46;Column 17, Lines 45-**

48;. Cantwell's system allows autonomous switching at the network interface

level and at the system communication link level if the non-operational active

card's or active link's performance monitoring indicated the need to switch to the

redundant card or link respectively.).

Cantwell, however, does not expressly disclose a method that includes detecting

and reporting when any card or communications link between the plurality of cards has

a change in operational status.

Barker discloses a method of detecting and reporting when any card or

communications link between the plurality of cards has a change in operational status.

(Barker indicates the use of trapping and polling attribute changes of monitored

network elements. See Column 25, Lines 40-65;Column 28, Lines 20-35; and

Column 1, Lines 49-55)

It would have been obvious to a person of ordinary skill in the art at the time of

the invention to use the maintenance-reporting scheme of Barker in Cantwell's invention

when a card or a link fails.   One would have been motivated to do this because having

the failed component up and running again would ensure that the current connection

has a backup connection for when it breaks down in the future guaranteeing continued

path protection and end-to-end path integrity. Further including Barker's method and

system in Cantwell's system eases remote network management.

9.   Regarding **claims 7 and 16**, Cantwell teaches all aspects of the claimed

invention as set forth in the rejection of claim 6 but fails to teach how to detect and

report status changes of the cards and links.

Barker discloses a method, used for systems like Cantwell's, and such a method

for detecting and reporting includes:

tracking how long the change in operational status persists; determining when the change in operational status has persisted for at least a pre-determined amount of time; and reporting the change in operational status when the pre-determined amount of time is exceeded. **(Barker discloses the use of trapping events and polling attributes to detect status change of network elements. See Column 25, Lines 40-65;Column 28, Lines 20-35; and Column 1, Lines 49-55)**

It would have been obvious to a person of ordinary skill in the art at the time of the invention to use the maintenance-reporting scheme of Barker with the status change tracking capability in Cantwell's invention.   One would have been motivated to do this because quickly determining the status change of a network element is critical to efficient network operation and eases remote network management.

10.   Regarding **claims 8 and 17,** Cantwell teaches all aspects of the claimed invention as set forth in the rejection of claim 6 and 7 but fails to teach how to detect and report status changes of the cards and links.

Barker discloses a method of detecting and reporting includes discarding the change in operational status when the change in operational status does not persist for the predetermined amount of time. **(See Column 28, Lines 20-25. Even though changes are detected every 15 second and displayed every 30 seconds the changes that last less that 15 seconds or 30 seconds are not reported or displayed.)**

It would have been obvious to a person of ordinary skill in the art at the time of the invention to use the maintenance-reporting scheme of Barker with ability to detect

status change frequently and report those that last long in Cantwell's invention. One

would have been motivated to do this because quickly determining the status change of

a network element is critical to efficient network operation and eases remote network

management

11.   **Claims 4 and 13** are rejected under 35 U.S.C. 103(a) as being unpatentable

over Cantwell et al (US 6,370,155), hereinafter Cantwell, in view of Barker et al (US 6,

363, 421), hereinafter referred to as Barker, as applied to claims 1 and 3, above, and

further in view of Jun et al (Jun et al, "Stand-by Loading Scheme: An Effective Software

Retrofit Method For Switching System", IEEE, Presented at Computer Communications

1998 Proceedings, 06/30/98), hereinafter referred to as Jun.

The combination of Cantwell and Barker teaches all aspects of the claimed

invention as set forth in the rejections of claims 3 and 12 but does not disclose that a

card is flagged with a non-operational status if the card is receiving a software upgrade.

Jun discloses that a card is identified with a non-operational status if the card is

receiving a software upgrade. **(See Figure 4 and Section 4.1)**

It would have been obvious to a person of ordinary skill in the art at the time of

the invention to have the redundant parts in the combination of Cantwell's and Barker's

invention operate the same way as described in Jun's system during software upgrade.

One would have been motivated to do this because the cards being updated will in

effect become non-operational during this process, so the system will want to

seamlessly reroute the communication messages using the redundant parts so that the

system does not have to shut down during an upgrade.

12.   **Claims 5 and 14** are rejected under 35 U.S.C. 103(a) as being unpatentable

over Cantwell et al (US 6,370,155), hereinafter Cantwell, in view of Barker et al (US 6,

363, 421), hereinafter referred to as Barker, as applied to claim 1, above, and further in

view of Harris (US 5, 771, 214).

The combination of Cantwell and Barker teaches all aspects of the claimed

invention as set forth in the rejections of claims 1 and 10 but does not expressly

disclose storing all of the past faults and the maintenance record of each card in a

database.

Harris discloses a method of recording data related to each card in a database;

and updating the database to reflect changes to any of the wherein the cards, wherein

the changes include maintenance performed on, replacement of, or user configuration

changes. **(Column 4, Lines 11-21; Harris discloses adding new alarms to a**

database that includes data of past alarms).

It would have been obvious to a person of ordinary skill in the art to keep a

record of past problems as disclosed by Harris in the combination of Cantwell and

Barker. One would have been motivated to do this because keeping a record of past

faults and changes can indicate the overall reliability of a particular system and can

indicate when a replacement part or system may be needed.

13.   **Claims 9 and 18** are rejected under 35 U.S.C. 103(a) as being unpatentable

over Cantwell et al (US 6,370,155), hereinafter Cantwell, in view of Barker et al (US 6,

363, 421), hereinafter referred to as Barker, as applied to claim 1, above, and further in

view of Badt, JR., (US Pub. No. 2003/0133417), hereinafter referred to as JR.

The combination of Cantwell and Barker teaches all aspects of the claimed invention as set forth in the rejections of claims 1 and 10 but does not expressly disclose the existence of a connection map.

JR. discloses that the flexible cross-connect system is a first node within a network **(Paragraph 172),** and further maintains a connection map for the network. **(Paragraph 174)**.

It would have been obvious to a person of ordinary skill in the art to use the teachings of JR. involving a method keeping a database that tracks the network spare capacity and connection map in the cross-connect units disclosed in both Cantwell's and Barker's systems. One would have been motivated to do this because this data can be stored in a database at the OSS or at the first node, so that it may be provided to the origin node as soon as failure is detected.

14. **Claim 19** is rejected under 35 U.S.C. 103(a) as being unpatentable over Cantwell et al (US 6,370,155), hereinafter Cantwell, in view of Read et al (US 5, 781, 527), hereinafter referred to as Read, and Badt, JR., (US Pub. No. 2003/0133417), hereinafter referred to as JR.

Cantwell discloses a method for controlling the operation of a flexible cross-connect system which has a plurality of cards **(Figure 1, elements 28 and 30; Column 6, Lines 5-10)** including an active control unit, a redundant control unit **(Figure 1, elements 12 A & B; Column 3, Lines 37-40)**, a plurality of interface cards **(Figure 1, elements 28 and 30; Column 6, Lines 5-10)**, an active cross-connect unit, a redundant cross-connect unit **(Figure 1, elements 24 and 26; Column 4, Lines 1-10)**, and a

backplane forming a plurality of data buses **(Column 16, Lines 33-38 and Column 18,**

Lines 40-45), the data buses acting as communications links between the plurality of

cards **(Column 10, Lines 42-45 and Column 11, Lines 5-10)**, that comprises:

monitoring the operational status for each one of the plurality of cards and each one of

the communications links between the plurality of cards within the flexible cross-connect

system; **(Column 12, Line 41 and Line 47; Column 13, Line 7and Line 12; Column**

15, Line 58; Column 17, Lines 45-48; Cantwell's system supports continuous

performance monitoring in effect to determine the operational status of the cards

and network elements. Performance monitoring sole purpose is to determine the

operational status of a given network element by comparing the observed test

results to predetermined threshold values)

determining when the operational status of any of the plurality of cards or the

communications links between the plurality of cards indicates that the card or the

communications link between the plurality of cards is non-operational; **(Column 12,**

Line 41 and Line 47; Column 13, Line 7and Line 12; Column 15, Line 58; Column

17, Lines 45-48;Performance monitoring of network elements involves data

collection as well as determining the operational status of network elements.)

autonomously switching from the non-operational active card to an associated

redundant card when the operational status of the non-operational active card is

determined or from the non-operational active communications link between the plurality

of cards to an associated redundant communications link between the plurality of cards

when the operational status of the non-operational active communications link between

the plurality- of cards is determined; **(Column 16, Lines 41-46;Column 17, Lines 45-48;. Cantwell's system allows autonomous switching at the network interface level and at the system communication link level if the non-operational active card's or active link's performance monitoring indicated the need to switch to the redundant card or link respectively.)**
determining when the non-operational active card or the non-operational active communications link between the plurality of cards requires maintenance; **(Column 2, Lines 42-49; Column 6, Line 28; Column 9, Lines 30-32; Cantwell's system not only determines that the a specific card or link needs maintenance but also has the capability to keep a circuit or a connection in service while performing maintenance on the non-operational card or link.).**

Cantwell, however, does not expressly disclose reporting maintenance is required for non-operational cards or links. Cantwell also fails to disclose the existence of a connection map associated with the network the flexible cross-connect system is part of.

Read discloses an identical system to that of Cantwell's where that reports maintenance is required for the non-operational active card or the non-operational active communications link between the plurality of cards when it is determined that the non-operational active card or the non-operational active communications link between the plurality of cards requires maintenance. **(Column 10, Lines 34-35, Lines 47-49, and Lines 57-60;)**

It would have been obvious to a person of ordinary skill in the art at the time of the invention to use the maintenance-reporting scheme of Read in Cantwell's invention when a card or a link fails.   One would have been motivated to do this because having the failed component up and running again would ensure that the current connection has a backup connection for when it breaks down in the future guaranteeing continued path protection and end-to-end path integrity.

JR. discloses a system that maintains a connection map associated with the flexible cross-connect system **(Paragraph 174)**, the flexible cross-connect system being a node in a network **(Paragraph 172)**, the connection map being arranged to indicate statuses of nodes with the network,, wherein when it is determined that the operational status of any one of the plurality of cards or any one of the communications links between the plurality of cards indicates that the card is non-operational or the communications link between the plurality of cards is non-operational, the connection map is updated to indicate a change in status of the flexible cross-connect system. **(Paragraphs 8, 179 and 185; JR.'s discloses a system with the capability to generate a connection map that shows the active nodes along with cards and links and when ever a link or path or card fails the map in the database is updated to reflect the correct status including change in spare capacity.)**

It would have been obvious to a person of ordinary skill in the art to use the teachings of JR. involving a method keeping a database that tracks the network spare capacity and connection map in the cross-connect units disclosed in both Cantwell's and Read's systems.   One would have been motivated to do this because this data can

be stored in a database at the OSS or at the first node, so that it may be provided to the

origin node as soon as failure is detected.

Response to Arguments

15.   Applicant's arguments filed on 05 May 2005 have been fully considered but they

are not persuasive.

16.   In the Remarks, Page 10, Applicant's response to the Examiner's objections to

claims 1, 6, 10, 15, 19, and 20 have been thoroughly reviewed.   Since the Applicant is

on record indicating that the reference to the phrase "communication link" in these

claims is not referring to the system communication links described in the specification

but only refers to point-to-point connectors, the Examiner agrees that the use of the

phrase "communication link between cards" no longer constitutes new material not

covered in the specification.

However, the Examiner still maintains the objection to these claims because the

specification supports point-to-point connection between cards for the class of cards

that only exist on the data plane as shown in Figure 1. The specification clearly

distinguishes between the class of cards on the telecom plane and the data plane.   The

data plane has the low-speed cards while the telecom plane has the high-speed cards

as stated on Page 11, Lines 10-12.   There is no indication in the specification or

drawings that there is a point-to-point connection between the class of cards classified

as high-speed cards associated with the telecom plane. This distinction has to be

reflected in claims 1, 6, 10, 15, 19, and 20.

17.   Applicant, in the Remarks on Page 12 in the second paragraph, argues neither

Cantwell nor Read teaches a monitoring of communication link between cards.

Examiner agrees with the Applicant's argument. However it should be pointed out that,

in light of the claim objections made by the Examiner in the Office Action dated 25

February 2005, the rejection to these claims was based on the direct use of the phrase "

communication link" in the specification to mean "system communication link". Since

the Applicant has clarified communication link to mean point to point connectors making

up the data bus(es) connecting the cards a new rejection for claims 1, 6, 10, 15, 19, and

20 has been presented based on the combined teachings of Cantwell, Read and

Suprenant. Suprenant specifically teaches monitoring of communication links between

cards and support in Suprenant's teachings is cited in the rejection of these claims.

18.   Applicant, in the Remarks on Page 12 in the last paragraph, argues performance

monitoring is not equivalent to monitoring the operational status of DS1 and E1 lines.

Examiner respectfully disagrees with the Applicant's conclusion. Performance

monitoring includes monitoring operational status of a device and more. Performance

monitoring of highly sophisticated devices like DS1 and E1 includes monitoring at

different protocol layers and determining the operational status based on the data

collected. Performance monitoring tool has to detect if the device is operational or not

prior to collecting any data from the device being monitored. However, the newly cited

prior art of Barker unambiguously shows that the operational status of a network

element is continuously monitored and reported. See Barker Column 28, Lines 20-40

and Column 38, Lines 10-20.

19.   Applicant, in the Remarks on Page 13 in the second paragraph and on Page 19,

argues reporting faults and errors is not the same as reporting maintenance is required.

Examiner respectfully disagrees with the Applicant's conclusion. Every reported fault

and error inherently indicates maintenance is required and how soon maintenance is

required can be coded in the error message with a varying level of alarm and is strictly a

design issue. The newly cited prior art (i.e. Barker, Column 34 – item 2) further clarifies

this point adequately.

20.   Applicant, in the Remarks on Page 13 in the last paragraph, argues that Cantwell

does not teach or suggest preventing communication for non-operational active card in

the rejections for claims 3-5 and 9. Applicant further argues that communication can be

sent to an unavailable or out of service card. Examiner respectfully disagrees with the

Applicant's conclusion. Indeed when a card or an interface is placed unavailable or out

of service then it is clear for one skilled in the art that card is not used for normal

operation. If for instance it is a T1 card in out-of-service status it will not carry any live

data or voice call and in this sense no data communication is being sent to the card.

However, as Cantwell teaches in Column 2, Lines 42-49; Column 6, Line 28; Column 9,

Lines 30-32 on a card that is put out of service maintenance is performed. Sending

maintenance signal to a card that is out of service is not the same as sending traffic

communication to an operational card. In fact, Cantwell's system has an edge because

of its ability to repair cards and interfaces before manual intervention.

21.   Applicant, in the Remarks on Page 14, argues Quoc fails to indicate explicitly the

use of a flag to indicate software update occurrence on the card. Examiner agrees with

the Applicant. The newly cited prior art by Jun clearly shows that the entity receiving

update is in Out-Of-Service Status. However, it is obvious to one skilled in the art that

different phases of out-of service can exist such as for instance phases indicating

initialization and power loss. Since Barker already shows all status changes are

detected there is no reason not to assume such a state will be detected.

22.   Applicant, in the Remarks on Page 16, argues that Read neither teaches of nor

reasonably suggests determining when a change in operational status has persisted for

at least a predetermined amount of time. Examiner respectfully disagrees and

maintains that Reading's teachings implicitly teach that a change in operational status is

maintained a predetermined amount of time before it is reported. However, the newly

cited prior art clearly points that the predetermined amount of time is 15 seconds.

Conclusion

The prior art made of record and not relied upon is considered pertinent to

applicant's disclosure.

The following US Patents disclose a device that sends an indication that it is

receiving software update:

US Patent (6, 122, 639) to Babu et al

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Habte Mered whose telephone number is 571 272 6046.

The examiner can normally be reached on Monday to Friday 9:30AM to 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Hassan Kizou can be reached on 571 272 3088. The fax phone number for

the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

HM
07-22-2005

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